

SHARP

PORTABLE MINIDISC RECORDER
PORTABLER MINI-DISC RECORDER
REPRODUCTEUR-ENREGISTREUR MINIDISC PORTABLE
REPRODUTOR/REPRODUTOR MINIDISC PORTÁTIL
PORTABAR MINISKIVINSPELARE
REGISTRATORE DI MINIDISCHI PORTATILE
PORTABARE MINIDISC RECORDER
便携式迷你光碟录放音机

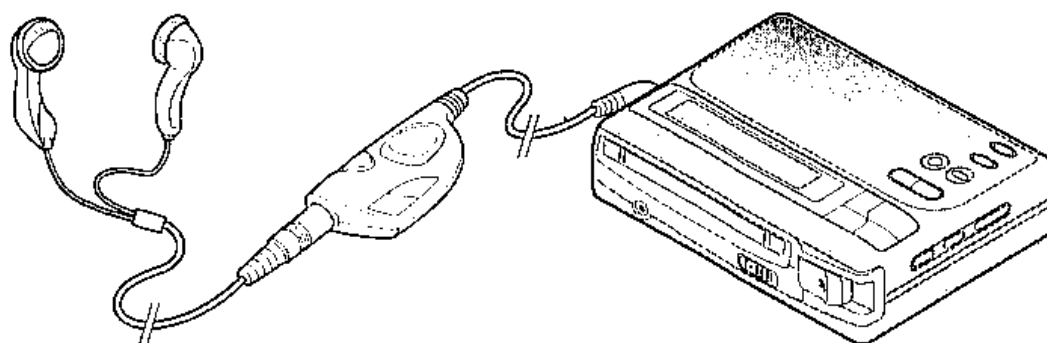
MODEL
MODELL
MODÈLE
MODELO

MODELL
MODELLO
MODEL
機型

MD-MS100H MD-MS100X

OPERATION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUAL DE MANEJO

BRUKSANVISNING
MANUALE DI ISTRUZIONI
GEBRUIKSAANWIJZING
使用説明書



ENGLISH

DEUTSCH

FRANÇAIS

ESPAÑOL

SVENSKA

ITALIANO

NEDERLANDS

中文

**SPECIAL NOTES
BESONDERE ANMERKUNGEN
REMARQUES SPÉCIALES
NOTAS ESPECIALES
SÄRSKILDA ANMÄRKNINGAR
NOTE PARTICOLARI
BIJZONDERE OPMERKINGEN**

NOTE FOR USERS IN THE U.K.

SERVICE INFORMATION

In the unlikely event of your equipment requiring repair, please contact the dealer or supplier from whom it was purchased. Where this is not possible, please contact the telephone number listed below. You will then be given details of how to obtain service.

0345-125387

Please note; all calls will be charged at local rate.

Certain replacement parts and accessories may be obtained from our main parts distributor, who can be contacted on the following numbers;

WILLOW VALE ELECTRONICS LTD.

MANCHESTER	0161-682-1415
READING	01734-876444

In the unlikely event of this equipment requiring repair during the guarantee period, you will need to provide proof of the date of purchase to the repairing company. Please keep your invoice or receipt, which is supplied at the time of purchase.

- Recording and playback of any material may require consent, which SHARP is unable to give. Please refer particularly to the provisions of the Copyright Act 1956, the Dramatic and Musical Performers Protection Act 1958, the Performers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.
- This equipment complies with the requirements of Directives 89/336/EEC and 73/23/EEC as amended by 93/68/EEC.

WARNING:

THIS AC ADAPTOR IS NOT FOR USE WITH TOYS.

THIS AC ADAPTOR IS FOR USE WITH MD RECORDER MODEL MD-MS100H ONLY.

WARNING FOR THE AC ADAPTOR:

THIS UNIT CONTAINS NO USER SERVICEABLE PARTS. NEVER REMOVE UNLESS QUALIFIED TO DO SO. THIS UNIT CONTAINS DANGEROUS VOLTAGES. ALWAYS REMOVE MAIN PLUG FROM THE SOCKET BEFORE ANY SERVICE OPERATION AND WHEN NOT IN USE FOR A LONG PERIOD.

US and foreign patents licensed from
Dolby Laboratories Licensing Corporation.

● Audio-visual material may consist of copyrighted works which must not be recorded without the authority of the owner of the copyright. Please refer to relevant law in your country.

● Audio-visuelles Material kann Urheberrechte umfassen, die ohne Genehmigung des Eigentümers dieser Urheberrechte nicht aufgenommen werden dürfen. Siehe die entsprechenden nationalen Gesetze.

● Le matériel audio-visuel peut comporter des oeuvres faisant l'objet de droits d'auteur qui ne peuvent être enregistrées sans l'autorisation du possesseur du droit d'auteur, veuillez vous référer aux réglementations nationales en vigueur.

● El material audiovisual puede consistir en trabajos que tengan derechos de autor y que no deben grabarse sin la autorización del poseedor de dichos derechos de autor. Sírvase consultar las leyes aplicables en su país.

● Audiovisuellt material kan innehålla upphovsrättsarbete som inte skall mångfaldigas utan tillstånd av copyrightinnehavaren. Se den tillämpliga lagen i ditt land.

● Il materiale audio-visivo che fosse soggetto a copyright non può essere registrato senza l'autorizzazione del possessore del copyright. Si prega di attenersi alle leggi in vigore sul territorio nazionale.

● Audio-visueel materiaal kan worden beschermd door auteursrechten, in welk geval het niet mag worden opgenomen zonder de toestemming van de auteursrechthouder. Zie voor nadere informatie de betreffende wetten in het land van gebruik.

When connecting the appliance to an external DC-source, ensure that there is a fuse protection in the circuit.

Ønsker man at tilslutte en DC-adaptor så skal der være en godkendt type med indbygget sikring.

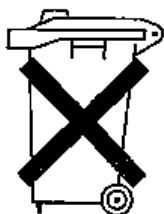
Vid anslutning till yttre likspänningskälla skall det alltid finnas en säkring i kretsen.

Käytettäessä akkua tai mutta ulkopuolista tasajännitelähdettä on laitteen ja jännitelähteen välillä boltava sulakkeella varustettu adaptor.

DENNA APPARAT ÄR ANSLUTEN TILL 230 V VÄXELSTRÖM NÄR STICKPROPPEN ÄR INSKJUTEN I VÄGGUTTAGET. FÖR ATT FULLSTÄNDIGT KOPPLA IFRÅN APPARATEN, V.G. DRAG UT STICKPROPPEN.

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

● This equipment complies with the requirements of Directives 89/336/EEC and 73/23/EEC as amended by 93/68/EEC.
● Dieses Gerät entspricht den Anforderungen der EG-Richtlinien 89/336/EWG und 73/23/EWG mit Änderung 93/68/EWG.
● Ce matériel répond aux exigences contenues dans les directives 89/336/CEE et 73/23/CEE modifiées par la directive 93/68/CEE.
● Dit apparaat voldoet aan de eisen van de richtlijnen 89/336/EEG en 73/23/EEG, gewijzigd door 93/68/EEG.
● Dette udstyr overholder kravene i direktiv nr. 89/336/EEC og 73/23/EEC med tillæg nr. 93/68/EEC.
● Quest' apparecchio è conforme ai requisiti delle direttive 89/336/EEC e 73/23/EEC, come emendata dalla direttiva 93/68/EEC.
● Este equipamento obedece às exigências das directivas 89/336/CEE e 73/23/CEE, na sua versão corrigida pela directiva 93/68/CEE.
● Este aparato satisface las exigencias de las Directivas 89/336/CEE y 73/23/CEE, modificadas por medio de la 93/68/CEE.
● Denna utrustning uppfyller kraven enligt riktlinjerna 89/336/EEC och 73/23/EEC så som kompletteras av 93/68/EEC.
● Dette produktet oppfyller betingelsene i direktivene 89/336/EEC og 73/23/EEC i endringen 93/68/EEC.
● Tämä laite täyttää direktiivien 89/336/EEC ja 73/23/EEC vaatimukset, joita on muutettu direktiivillä 93/68/EEC.
● Η εγκατάσταση αυτή ανταποκρίνεται στις απαιτήσεις των οδηγιών της Ευρωπαϊκής Ένωσης 89/336/EOK και 73/23/EOK, όπως οι κανονισμοί αυτοί συμπληρώθηκαν από την οδηγία 93/68/EOK.



Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

Warning:

To prevent fire or shock hazard, do not expose this appliance to dripping or splashing.

Vorsicht:

Das Gerät weder Tropf- noch Spritzwasser aussetzen. Ansonsten besteht die Gefahr eines Brandes oder elektrischen Schlages.

Attention:

Ne pas exposer ce matériel aux éclaboussures et aux projections d'eau, qui pourraient provoquer le feu ou l'électrocution.

Advertencia:

Para prevenir incendio o sacudidas eléctricas, no exponga este aparato a gotas o salpicaduras.

Varning:

För att förhindra brand eller elektrisk stöt, skydda apparaten mot fukt och väta.

Adversel:

Til at forbygge ild og stød risiko, lad være med at undsætte denne indretning for drypning eller overstækning.

Adversel:

For å unngå brann eller kortslutning, ulsett ikke produktet for vann eller fuktighet.

Varoitus:

Älä vie laitetta sateeseen tai kosteisiin tiloihin. Jos laite on kostunut, anna sen kuivua ennen kuin käytät sitä verkkovirralla.

Attenzione:

Onde prevenire incendi o scosse elettriche, non esponete questo apparecchio a fonti di umidità o all' acqua.

● **CAUTION**

Use the portable minidisc recorder only in accordance with the instructions given in this manual and do not attempt to interfere with the interlock switch or make any other adjustment as this may result in exposure to hazardous radiation.

● **VORSICHT**

Verwenden Sie den portablen Mini-Disc Recorder nur entsprechend den in dieser Anleitung angegebenen Anweisungen, und versuchen Sie nicht, den Verriegelungsschalter zu beeinträchtigen, oder machen Sie keine andere Einstellung, da dies dazu führen kann, gefährlicher Ausstrahlung ausgesetzt zu werden.

● **ATTENTION**

Utiliser le lecteur-enregistreur minidisc portable en respectant les indications données dans ce manuel et éviter l'intervention sur le commutateur de verrouillage ou tout autre réglage. En cas de non-respect, on s'exposera à une radiation dangereuse.

● **PRECAUCIÓN**

Utilice el grabador/reproductor portátil minidisc sólo de acuerdo con las instrucciones dadas en este manual y no intente interferir el interruptor de bloqueo ni realizar ningún otro ajuste porque podría ocasionar la exposición a radiación peligrosa.

● **OBSERVERA**

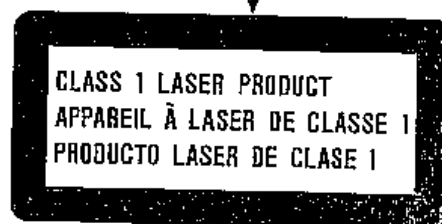
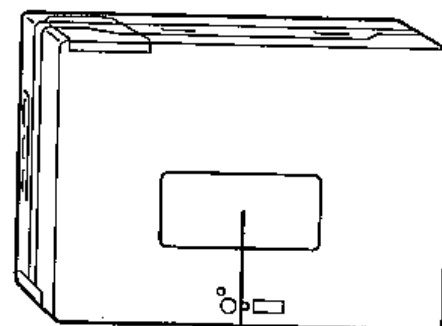
Använd den bärbara miniskivinspelaren endast i enlighet med anvisningarna i denna bruksanvisning och försök inte påverka låsningsströmbrytaren eller göra andra inställningar som kan leda till risk för farlig strålning.

● **ATTENZIONE**

Quando si usa il registratore di minidisc portatile, seguire le istruzioni di questo. Non cercare di interferire con l'interruttore interbloccato e non effettuare altre regolazioni, poiché ciò potrebbe provocare un'esposizione a pericolose radiazioni.

● **LET OP**

Gebruik deze draagbare MiniDisc-recorder alleen zoals in de aanwijzingen in deze gebruiksaanwijzing staat vermeld. Maak geen veranderingen in de interlockschakelaar of andere onderdelen, daar dit mogelijk blootstelling aan gevaarlijke stralingen veroorzaakt.



LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

Laser Diode Properties

- Material: GaAlAs
- Wavelength: 785 nm
- Pulse time:
 - Read mode: 0.8 mW Continuous
 - Write mode: max 10 mW 0.5 S
 - min cycle 1.5 S
 - Repetition

Eigenschaften der Laserdiode

- Material: GaAlAs
- Wellenlänge: 785 nm
- Impulszeit:
 - Lesemodus: 0,8 mW, kontinuierlich
 - Schreibmodus: max. 10 mW, 0,5 S
 - min. Zyklus 1,5 S
 - Wiederholung

Caractéristiques de la diode laser

- Matière: GaAlAs
- Longueur d'onde: 785 nm
- Durées de l'impulsion:
 - Mode de lecture: 0,8 mW (ininterrompue)
 - Mode d'écriture: 10 mW (maxi), 0,5 s
 - Cycle mini 1,5 s
 - Répétition

Propiedades del diodo láser

- Material: GaAlAs
- Longitud de onda: 785 nm
- Tiempos del pulso:
 - Modo de lectura: 0,8 mW continuo
 - Modo de escritura: máx. 10 mW 0,5s
 - Ciclo min 1,5s
 - Repetición

Laserdiodens egenskaper

- Material: GaAlAs
- Våglängd: 785 nm
- Impulstider:
 - Läsfunktion: 0,8 mW kontinuerlig
 - Skrivfunktion: max. 10 mW 0,5 S
 - min. cykel 1,5 S
 - Repetition

Proprietà del diodo laser

- Materiale: GaAlAs
- Lunghezza d'onda: 785 nm
- Tempo di impulso:
 - Modo di lettura: 0,8 mW Continua
 - Modo di scrittura: max 10 mW 0,5 S
 - ciclo minimo 1,5 S
 - Ripetizione

Karakteristieken van laserdiode

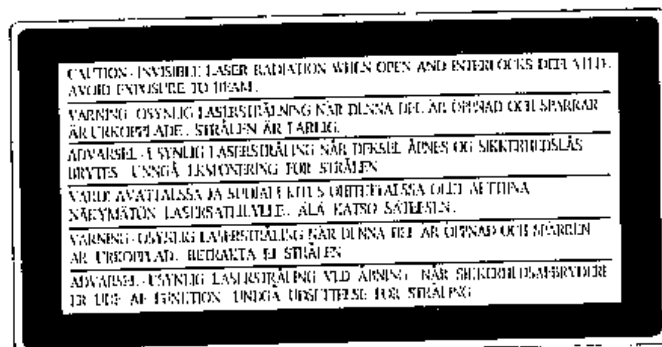
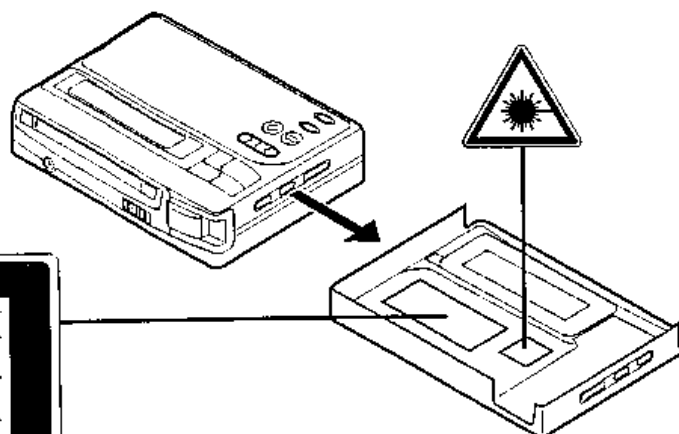
- Materiaal: GaAlAs
- Golflengte: 785 nm
- Pulstijden:
 - Leesfunctie: 0,8 mW Doorlopend
 - Schrijffunctie: max. 10 mW 0,5 S
 - min. cycle 1,5 S
 - Herhaling

Laserdiodens egenskaber

- Materiale: GaAlAs
- Bølgelængde: 785 nm
- Impulstider:
 - Læsemodus: 0,8 mW kontinuerlig
 - Skrivemodus: max 10 mW 0,5 S
 - min cyklus 1,5 S
 - Repetition

Laserdiodens egenskaper

- Material: GaAlAs
- Bølgelengde: 785 nm
- pulstid:
 - Lese-modus: 0,8 mW kontinuerlig
 - Skrive-modus: maks. 10 mW 0,5 S
 - min. syklus 1,5 S
 - Gjentakelse



VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING - OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERAS. KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

ENGLISH

INTRODUCTION

Thank you for purchasing this SHARP product.
For the best performance, read this manual carefully.
It will guide you in operating your SHARP product.

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SPECIAL NOTES

Warning:

To prevent fire or shock hazard, do not expose this appliance to dripping or splashing.

Warning:

The supplied AC adaptor contains no user serviceable parts.
Never remove covers unless qualified to do so. It contains dangerous voltages, always remove mains plug from the main outlet socket before any service operation or when not in use for a long period.

ACCESSORIES

- Headphones x 1
- Remote Control Unit x 1
- AC Adaptor (*) x 1
- Rechargeable Lithium-Ion Battery (AD-MS10BT) x 1
- RCA Lead x 1
- Carrying Bag x 1
- Recordable MiniDisc (60 minutes recording length) x 1

Note:

Parts and equipment mentioned in this operation manual other than those shown above are not included.

(*) The shape of the AC adaptor will vary according to the country in which this unit is purchased.

PRECAUTIONS

■ Important

- Do not wear your headphones when you are crossing streets or near traffic.
- Do not use your headphones whilst driving a motor vehicle, it may create a dangerous traffic hazard and may be illegal. Remember to obey all of the safety rules in your area.
- Do not play the unit at a high volume. Hearing experts advise against extended play at high volume levels.
- If you experience ringing in your ears, reduce the volume or discontinue use.

■ Volume setting

Reduce the volume before starting to play. MiniDiscs, compared to ordinary cassette tapes, have very little noise. If the volume is adjusted according to your usual expectations of noise, you may damage your hearing due to the high volume.

■ Concern for others when listening to MiniDiscs

The headphones supplied are open type headphones, which means that some sound can be heard by others.

If you are enjoying listening to music, the sound escaping from your headphones may annoy people around you.

If you are using the unit in particularly crowded places (such as on trains or buses), reduce the volume to avoid annoying people around you.

■ Storing the unit

Avoid using or leaving the unit in the following places.

- Places exposed to direct sunlight for many hours (especially in cars with the doors and windows closed) or near heaters.
(The cabinet may deform, change colour or the unit may malfunction.)
- Places exposed to water.
- Places exposed to excessive dust.
- Places where temperatures are excessively high or low.
- Places (bathrooms) where the humidity is extremely high.
- Places with strong magnetic fields such as TVs or loudspeakers.
- Places exposed to vibration.
- Places where sand can easily enter the inside of the unit (beaches etc.).
- If the unit is used near radio tuners or TVs, noise and/or picture interference may result. If you experience these problems, move the unit away from such devices.

■ Precautions







To avoid accidental electric shock or other possible problems, observe the precautions listed below.

- Do not disassemble or modify the unit.
- Do not drop or subject the unit to shock.
- Do not use the unit near open flames.
- Do not spill liquid on the unit.
- Do not use an external power supply, other than the 5V DC supplied with this unit, as it may damage it.
- SHARP is not responsible for damage due to improper use. Refer all servicing to a SHARP authorised service centre.





NAMES OF CONTROLS AND INDICATORS

See Fig.1 and Fig.2 on pages 1 to 2 of the ILLUSTRATED INSTRUCTIONS.

■ Main unit

1. Synchro Recording Indicator
2. Level Meter
3. Battery Indicator: 
4. Character Information Display
5. Disc Mark
6. TOC Indicator
7. Random Indicator
8. Repeat Indicator: 
9. Monaural Long-Play Mode Indicator
10. Volume/Name Select Buttons: 
11. Stop/Power Off Button: 
12. Fast Reverse/Fast Forward/Recording Level Control/Cursor Button: 
13. Microphone Input Socket
14. Hold Switch
15. Eject Lever
16. Play/Pause Button: 
17. Record Button
18. Enter/Synchro Button
19. Character/Symbol Select Button
20. Display Button
21. Edit/Auto Mark Button
22. Mode/Space Button
23. Extra Bass/Delete Button
24. Headphones Socket
25. 5V DC IN Socket
26. Optical/Line Input Socket
27. Rechargeable Lithium-Ion Battery Compartment

■ Remote control unit

1. Volume Control: 
2. Stop/Power Off Button: 
3. Track Mark/Extra Bass Button
4. Play/Pause Button: 
5. Fast Reverse/Fast Forward/Cursor Buttons: 
6. Hold Switch

- (A) Flashes whilst in the pause mode.
(B) Turns clockwise slowly whilst playing back.
(C) Recording display
(D) Turns clockwise slowly whilst recording.
(E) Turns clockwise quickly whilst fast forwarding.
(F) Turns anti-clockwise quickly whilst fast reversing.

POWER SOURCE

See Fig.3 and Fig.4 on pages 2 to 3 of the ILLUSTRATED INSTRUCTIONS.

■ AC power

- 1 Connect the AC adaptor lead to the DC IN 5V socket on the main unit.
- 2 Connect the AC adaptor to an AC socket.

Notes:



- When there is thunder or lightning in your vicinity, unplug the AC adaptor from the AC socket.
- When the unit is not in use for extended periods, remove the AC adaptor from the AC socket.
- Do not use any AC adaptor other than the one specified.
(Use of other adaptors may cause damage and/or malfunctions.)
- Do not bend, twist or tie the power lead or put heavy objects on top of it.

AC plug adaptor:


In areas (countries) where an AC socket as shown in illustration (4) is used, connect the unit using the AC plug adaptor supplied with the unit, as illustrated. The AC plug adaptor is not included in areas where the AC wall socket and AC power plug can be directly connected (see illustrations (1) - (3)).

■ Rechargeable battery power

When the rechargeable battery is used for the first time or when you want to use it after a long period of disuse, be sure to charge it fully.

- 1 Open the rechargeable battery compartment cover.
- 2 Insert the rechargeable battery.
 - Insert the side with the arrow first.
- 3 Close the rechargeable battery compartment cover.
- 4 Plug the AC adaptor into the AC socket, and then insert the plug on the AC adaptor lead into the DC IN 5V socket.
- 5 Load a MiniDisc. Press the ►|| button, and then press the ■ button to turn off the power.
 - After about 7 seconds, "  " will appear, and the battery will begin charging.
 - If a smaller capacity rechargeable battery is charged, it is not necessary to perform step 5 above. Once the AC adaptor is connected, the battery will begin charging within several seconds up to 2 minutes later.
 - Battery charging will be complete in 3 hours. When battery charging begins, "  " will be displayed. When the charging is complete, it will go out.

Notes:

- After charging has been completed, the AC adaptor may be left connected. (Charging at night.)
- The battery will not be charged whilst the main unit is operating.
- If the AC adaptor is removed from the main unit or from the AC socket whilst charging, "  " will not disappear for about 1 minute. This is normal.

■ Rechargeable battery operating time

After charging is complete, the unit can be used continuously as follows:

Continuous playback:

Approx. 4.5 hours (fully charged, volume level: VOL 20)

Continuous recording:

Approx. 3.5 hours (fully charged, analogue input, volume level: VOL 0)

How to determine the remaining battery time:

As the battery charge is reduced, the bars in the indicator will go out one by one. When the battery is almost completely exhausted, the whole battery indicator will flash.

At this point you should recharge the battery.

When the battery has run completely out, "BATT EMPTY" will be displayed, and the power will be disconnected automatically.

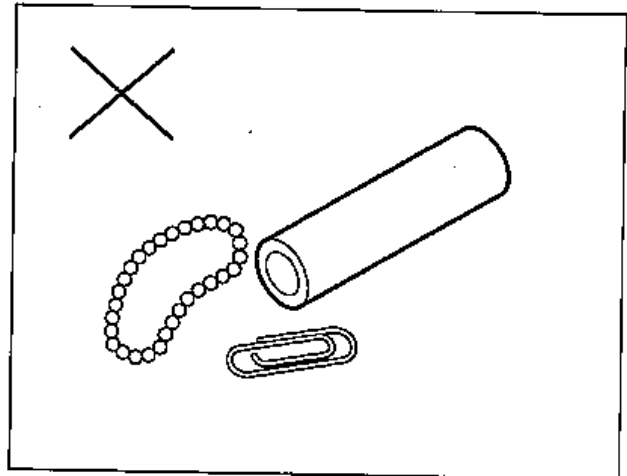
Note:

If the battery indicator is flashing, it will be impossible to start recording or editing.

■ Notes about the rechargeable battery

- A rechargeable lithium-ion battery is the only kind that can be used. Even if the battery supplied with the unit is not used, you should charge it at least once three months because of the special quality of this battery.
- The rechargeable battery can be charged approximately 300 times.
- Do not use any battery other than that specified. Use of other batteries may cause malfunctions.
- When the operating time is reduced to about half the normal amount of time, even after a full charge is performed, replace the battery with a new one.
- When charging or when using the rechargeable battery, use it within an ambient temperature range of 5°C to 35°C.

■ Precautions when using the rechargeable battery



Since the rechargeable battery is vulnerable to damage, please note the following.

- Do not carry the battery in your pocket or a bag together with metal objects (keys, coins, jewelry, etc.). The battery may short out and generate significant amounts of heat.
- Do not short-circuit the terminals as they will become very hot and will damage the battery.
- Do not dip the battery in water, do not dispose of it in a fire, and do not take it apart.

To avoid breaking the battery and shortening its service life, please note the following.

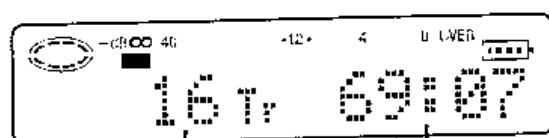
- Do not subject the battery to shock or drop it.
- Do not insert objects (metal etc.) into the battery compartment of this product or into the rechargeable battery. Do not get the terminals dirty. If the rechargeable terminals are dirty, the operating time may be shortened or it may not be possible to charge the battery.
- After the rechargeable battery is charged or used, it will get slightly warm. This is normal.

PLAYING A MINIDISC

See Fig.5 to Fig.6 on pages 3 to 4 of the ILLUSTRATED INSTRUCTIONS.

■ Loading a MiniDisc

- 1 Load a MiniDisc by holding it level and straight with the main unit (pushing on the centre part of the MiniDisc).
- The power will be turned on automatically, and the information written on the MiniDisc will be displayed. (After about 30 seconds, the power will turn off automatically.)



Total number
of tracks

Total playing
time

- If any resistance is felt, do not try to force load the MiniDisc. It may cause more problems. If resistance is felt, remove the MiniDisc and try reloading it.

Removing the MiniDisc

Turn off the power and move the EJECT lever in the direction indicated by the arrow.

Interrupted sound:

- This product is designed to eliminate interruptions in the sound which can be caused by vibrations. However, if the unit is continuously exposed to vibrations or shocks, the sound may be momentarily interrupted. If this happens, place the unit in a location with less vibration.
- When the unit is being used with the rechargeable battery, the shock resistant memory is adjusted to about 5 seconds, to conserve power. (Auto power save mode)
If you want to set it to for 10 seconds, turn off the auto power save mode. (Page 27)

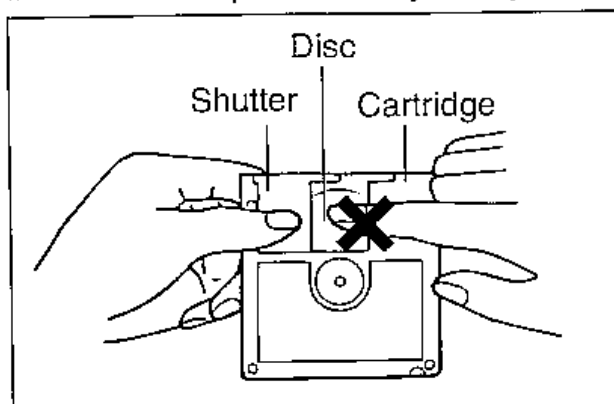
■ Handling the MiniDisc

The disc is stored in a cartridge. You can handle it easily without worrying about dust, fingerprints, etc. However, dust entering the opening of the cartridge, dirt on the cartridge, warping, etc. may cause malfunctions. Please note the following.

Do not touch the disc directly!

Do not open the shutter or touch the disc directly.

If the shutter is opened forcibly, it may break.



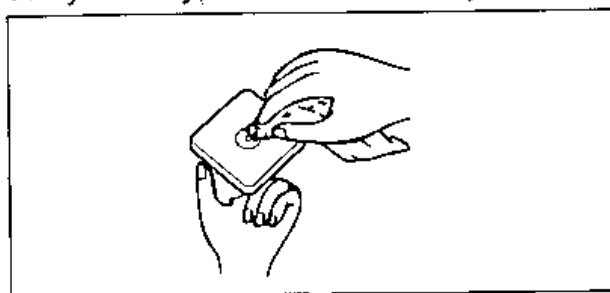
Where not to store discs:

Do not store discs in places with high temperatures or humidity. Specifically, do not leave discs in places exposed to direct sunlight or in cars with doors and windows closed.




Do not leave discs in places where sand can get into the cartridge easily (e.g., beaches).

Regular cleaning:


If the surface of the cartridge becomes dusty or dirty, clean it with a dry cloth.




■ Playback

- 1** Connect the headphones firmly to the  PHONES socket on the remote control unit.
- 2** Connect the remote control unit firmly to the  (PHONES) socket on the main unit.
- 3** Press the  button.
 - (1) The power will be turned on, and the disc information will be read.
 - (2) The track number and the track name will be displayed in a scrolling fashion (the characters will move towards the left), and playback will start from the first track. The tracks will be played in order.
(For MiniDiscs which do not contain track names, nothing will be displayed.)
 - (3) The elapsed playing time of the track is displayed.
- After the last track has finished playback, the disc will stop automatically.

To interrupt playback:

Press the  button during playback.


- To resume playback, press the  button again.

To stop playback:

Press the  button.

- The total playing time and the number of tracks on the disc will be displayed.
(When the disc has a name, it will be displayed first. Then the total playing time and the number of tracks on the disc will be displayed.)

To turn off the power:



Press the  button whilst in the stop mode.

- After "GOOD BYE!" appears for approximately 1 second, the entire display will go blank.

Notes:

- When playback resumes after being halted, or the power has been turned off, it will start at the point on the disc where playback was halted. However, if the MiniDisc is removed and reinserted before playback resumes, playback will start from the first track. If the unit is not operated for at least 2 minutes, the power will be turned off automatically.
- Since the main unit and the AC adaptor heat up during use, you should avoid allowing the unit to be in direct contact with your skin for any length of time.

■ Volume

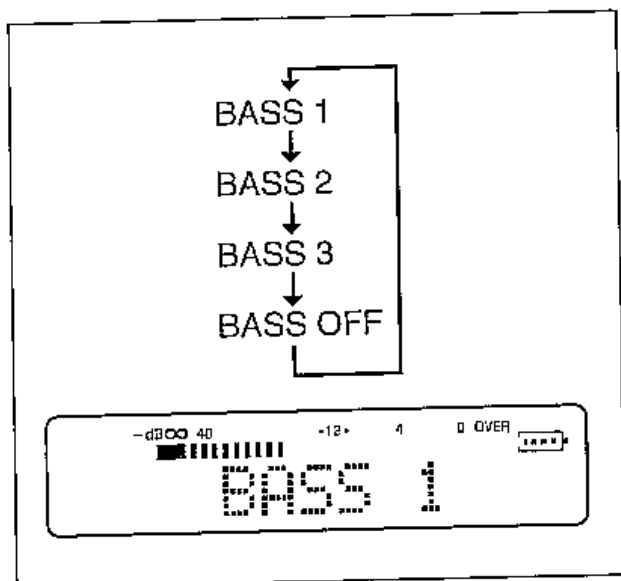
Press the VOLUME/ button to increase the volume and the VOLUME/ button to decrease the volume.

- The volume level can be adjusted from "VOL 0" to "VOL 30".
- Whenever the volume is adjusted, the new setting will be stored, even after the power is turned off.
- When connecting this unit to other equipment or using commercially available headphones, adjust the volume using the VOLUME button on the main unit.

■ Tone

Each time the X-BASS/DELETE button is pressed, the tone will be switched as follows:

- (1) **BASS 1**
Bass is emphasised a little.
- (2) **BASS 2**
Bass is emphasised more.
- (3) **BASS 3**
Bass is emphasised still more.
- (4) **BASS OFF**
Bass emphasis is cancelled.



Notes:

- If the volume is too high whilst the bass is being emphasised, the sound may be distorted, depending on music on the track. If this happens, decrease the bass level or lower the volume level.
- If the volume is increased to "VOL 23" or higher, the bass level will be adjusted automatically.
(This is done to reduce the distortion in the sound.)
- Any settings which have been changed will be stored, even after the power is turned off.
- When recording, it is impossible to adjust the bass level (cancel mode).

■ APSS

(Auto Program Search System)

APSS automatically locates the beginning of any track.

To move to the beginning of the next track:

Press the ►► button during playback.

To re-start the track being played:

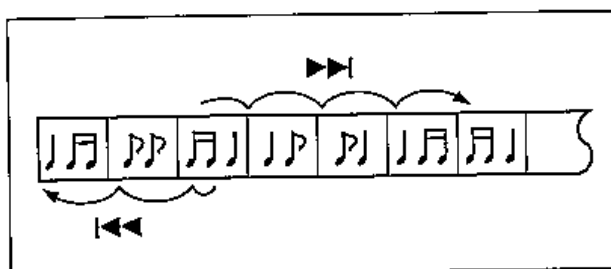
Press the ◀◀ button during playback.

To skip a number of tracks at one time, press the ◀◀ or ►► button repeatedly until the desired track number is shown.

To begin playback at a desired track, press the ◀◀ or ►► button whilst in the stop mode to select the track number. Then press the ►|| button.

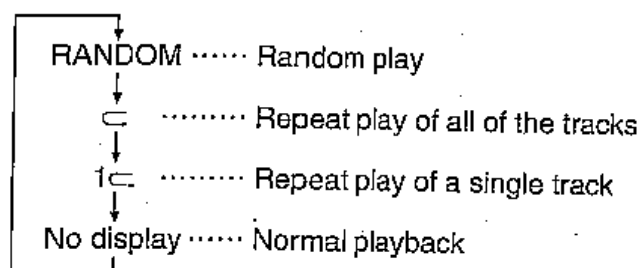
Note:

- When the first track is selected and the ◀◀ button is pressed, the last track on the disc will be located. When the last track is selected and the ►► button is pressed, the first track will be located.



■ Random play or repeat play

During playback or whilst in the stop mode, press the MODE/SPACE button repeatedly to select the playback mode.



- If the playback mode is selected whilst stopped, press the ►|| button to resume playback.

Random play

- "RANDOM" will be displayed.
- After the track you are listening to has finished playing back, all of the tracks will be played back once, in random order, and then the unit will automatically stop the disc.

To cancel random play:

Press the MODE/SPACE button to turn off "RANDOM".

Notes:

- During random play, cue and review of the previous or next tracks are not possible.
- If the ◀◀ button is pressed, the previous track will not be played back.

Repeat play

- "C" or "1C" will be displayed.

To cancel repeat play:

Press the MODE/SPACE button to turn off "C" or "1C".

Note:

- When "TOC" is displayed, repeat play is impossible.

■ Cue and review

- 1 Load a MiniDisc and begin playback.
- 2 Press and hold down the ►►| button for audible fast forward, or press and hold down the ◀◀ button for audible fast reverse.
- 3 Normal playback will resume when the ◀◀ or ►►| button is released.

Notes:

- When the end of the last track is reached during fast forward, the unit will enter the pause mode. When the beginning of the first track is reached during fast reverse, the unit will enter the playback mode. When the unit is in the all track repeat mode, the search will wrap around from the last track to the first, or vice versa.
- Depending on the contents recorded on a MiniDisc, some sounds may be skipped whilst cueing and reviewing.
- During repeat play, fast forward from the last track to the first track or fast reverse from the first track to the last track is possible.
(This feature is convenient when searching the contents of a recording, such as the conversation in a meeting.)

To search very quickly:

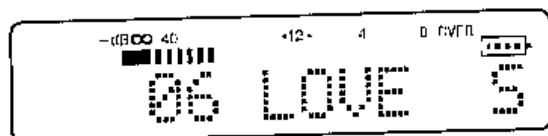
When fast forward or fast reverse is used whilst in the pause mode, the search will be performed more quickly than during audible fast forward or fast reverse playback.

- In this mode, no sound is heard. Therefore, you should refer to the time display.
- When you lift your finger, the unit will re-enter the pause mode.

■ To check the name of the track

During playback, press the DISPLAY button.

- Each time the button is pressed, the display will alternately show the track name and then the elapsed playback time.



To check individual track names one by one:

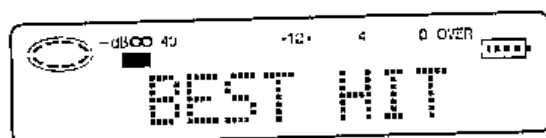
Press the ◀◀ or ▶▶ button whilst in the stop mode.

Each time the button is pressed, the previous or next track will be displayed.

■ To check disc names

Whilst in the stop mode, press the DISPLAY button.

- Each time the button is pressed, the display will alternately show the disc name and then the total playing time.



- Whilst characters are moving to the left, if you press the DISPLAY button, the first portion of the disc name will appear.
If you press the DISPLAY button again in this condition, the time display will appear.

Note:

No character information will be displayed if it was not originally recorded on the MiniDisc.

TYPE OF RECORDING

Two types of recording are possible: "Digital recording" and "Analogue recording". There are different cables and connections for each type of recording, depending on the sockets on the equipment being connected to the unit.

(1) Digital recording

Connect the unit to equipment that has an optical output socket using an optical digital cable (available separately). Using an optical signal to transfer the music to a MiniDisc allows very high quality recording.

It is not necessary to adjust the recording level. A track number is automatically assigned to each music selection from the sound source.

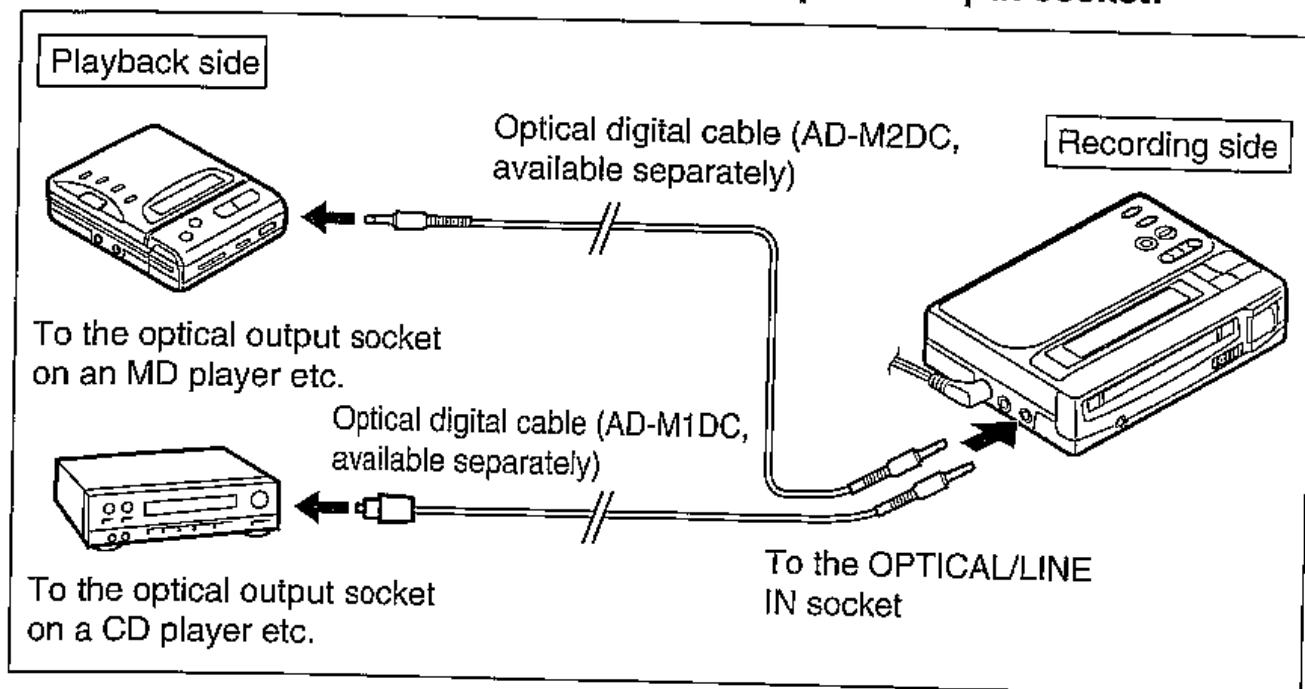
- Main equipment: CD player, MD player, etc.
- Cable required: Optical digital cable (AD-M1DC or AD-M2DC, available separately)

(2) Analogue recording

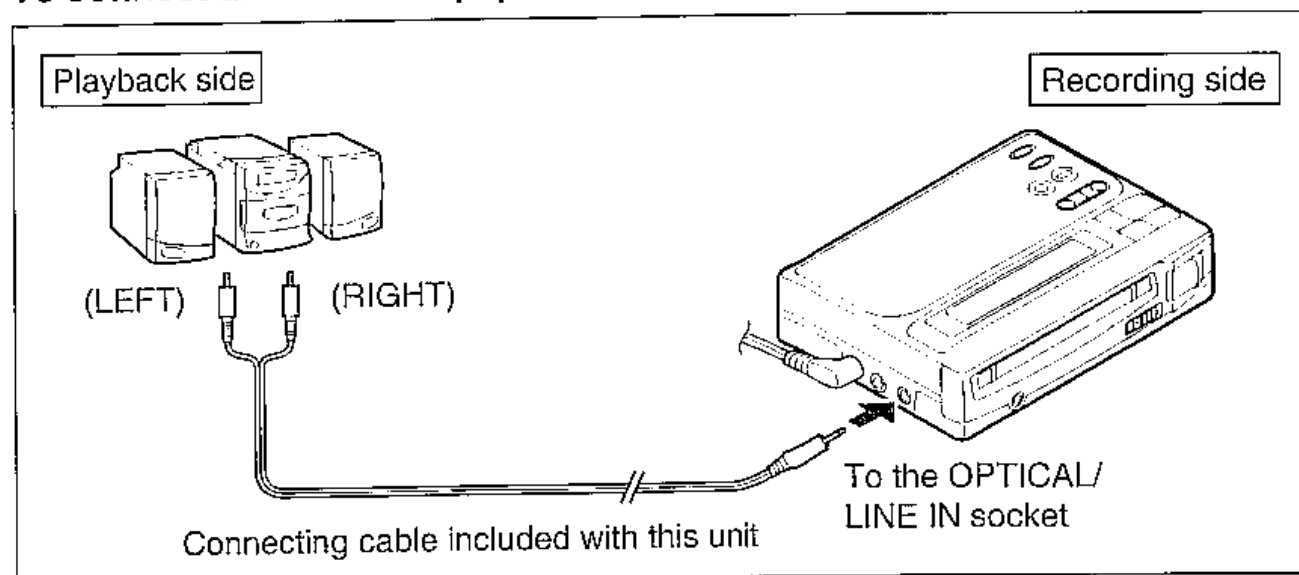
Connect the unit to equipment that has a line output socket, using the cable included with this unit.

- Main equipment: CD player, MD player, radio cassette player, etc.
- Cable required: Connecting cable included with this unit

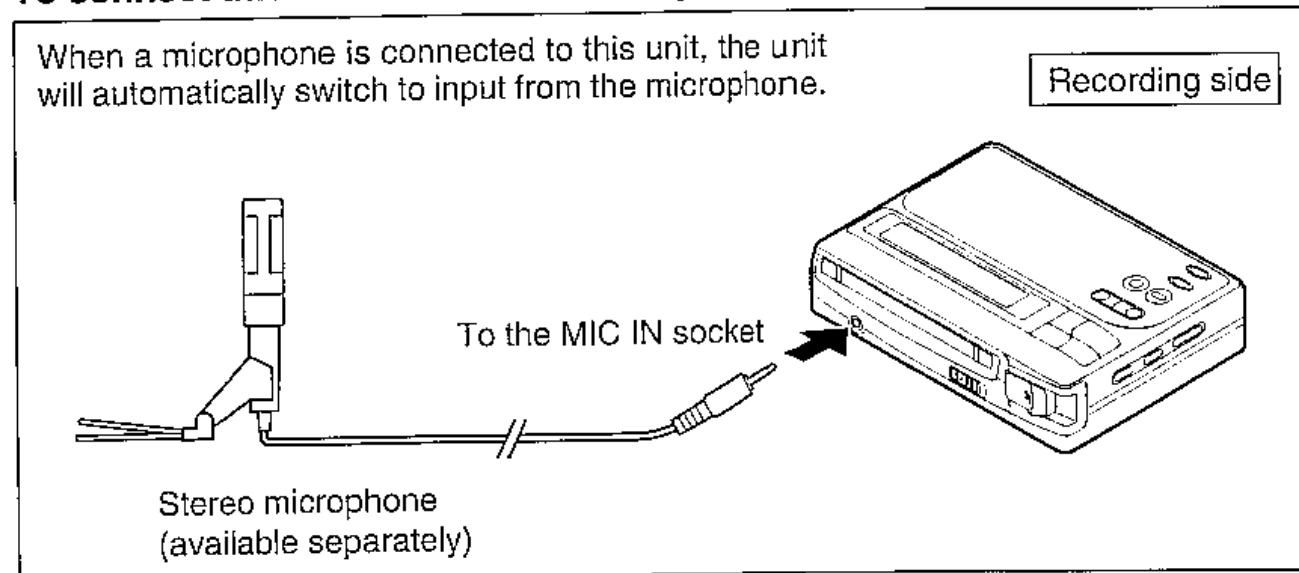
To connect this unit to equipment with an optical output socket:



To connect this unit to equipment with a line output socket:



To connect this unit to a stereo microphone:



Notes:

- If you want to use any microphone other than the specified one, be sure to use a plug-in power type microphone.
- Insert the plug firmly. If not, recording cannot be performed properly.
- Use a microphone with a 3.5 mm diameter stereo mini plug.
- When a recording is made using a stereo microphone (available separately), an analogue recording will be made.

Notes:

- There are some cases where a digital recording cannot be made. (Page 29)
Even if equipment with an optical output socket is used, if the sampling frequency of the equipment is not 44.1 kHz, recording will not be possible.
- For making important recordings, it is recommended that you use the AC adaptor.
A fully charged rechargeable battery should be loaded into the unit. Then, even if a power failure occurs, the power will be switched automatically to use the rechargeable battery.
- When connecting this unit to other equipment, check the shape of each output socket built into each unit, and connect them properly.

RECORDING

See Fig.7 on pages 5 to 6 of the ILLUSTRATED INSTRUCTIONS.

■ Synchro recording

In the following situations, recording is impossible.

- Recording on a playback-only MiniDisc (commercially available music)
- If a MiniDisc is protected against accidental erasure (page 18)

To make a synchro recording using a digital cable, operate the equipment connected to this unit, as described to the right.

- ① Put the other equipment in the playback mode.
- ② Put the other equipment in the pause mode.
- ③ Locate the beginning of the track on the MiniDisc where you want to make a recording.

1 Insert a recordable MiniDisc.

2 Press the REC button.

3 Adjust the recording level.

Note:

When the optical output socket is connected, this operation is not necessary.

(1) Press the ◀◀ or ▶▶ button so that the recording level display reads "LINE".

To set the recording level, refer to the following table.

Recording side	Recording level display
Recording from equipment with a low output level	LINE 21 to 30
Recording from equipment with a high output level, such as a CD player	LINE 00 to 20

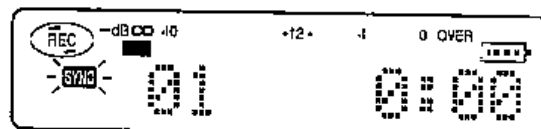
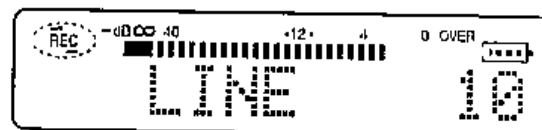
(2) Send the sound you want to record through the other equipment's output, and watch the level meter. Press the ◀◀ or ▶▶ button to adjust the recording level.

- Adjust the recording level so that the maximum sound volume from the source makes it swing to a point between -4 dB and 0 dB.
- When recording from microphone inputs, see page 15 (manual recording).

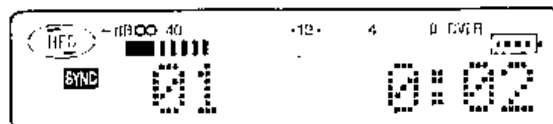
(3) Put the equipment connected to this unit into the pause mode, and then locate the beginning of the track.

4 Press the ENTER/SYNCHRO button.

- "SYNC" will flash.
- Synchro recording is a method that detects the playback sound from source equipment and automatically starts or pauses the recording with the presence or absence of sound.
- Depending on the strength and type of playback signal, recording may not begin or pause at the correct point in the original. If this happens, control the recording manually.



- 5** Begin playback on the source equipment.
- Recording will begin automatically.
 - When the source equipment is stopped, the unit will enter the synchro recording stand-by mode. When playback is resumed, a continuous recording will be made.



To stop synchro recording:

Press the ►|| button during recording.

- The recording will be paused.

To stop recording:

Press the ■ button.

After recording:

Press the ■ button.

- After the track number has been written on the disc, the power will be turned off automatically.
- Whilst "TOC EDIT!" is displayed, do not jar or bump the main unit. Otherwise, the TOC may not be recorded properly.

Notes:

- The recording level you set will be stored, even if the power is turned off.
- If the recording level is too low, the playback sound volume may be too low to hear well. If it is too high, the playback sound may be greatly distorted. Since digitally recorded CDs have a large dynamic range (the volume can vary tremendously from very soft to extremely loud), do not set the recording level any higher than is necessary.
- If synchro recording is made from a portable CD player which is equipped with a dropout function, turn off the dropout function before recording.
- Do not jar or bump the main unit whilst recording. Otherwise, the recording may be unusable.

■ Manual recording

- 1** Insert a recordable MiniDisc.
- 2** Press the REC button.
- 3** Adjust the recording level.

Note:

When the optical output socket is connected, this operation is not necessary.

- (1) Press the ◀◀ or ▶▶ button so that the recording level display reads "MIC".

To set the recording level, refer to the following table.

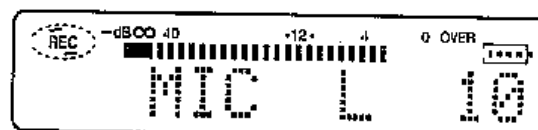
Recording side	Recording level display
Recording meetings	MIC H 21 to 30
Recording of live concerts etc.	MIC L 00 to 20

- (2) Send the sound you want to record through the other equipment's output, and watch the level meter. Press the ◀◀ or ▶▶ button to adjust the recording level.

- Adjust the recording level so that the maximum sound volume from the source makes it swing to a point between -4 dB and 0 dB.

- For a guide to line input levels, see page 13.

- (3) Put the equipment connected to this unit into the pause mode, and then locate the beginning of the track.



- 4** Press the ▶|| button, and begin playback on the equipment connected to this unit.
- Recording will start.

To interrupt a recording:

Press the ▶|| button during recording.

- To resume recording, press the ▶|| button again.
- The track number will increase by one each time you interrupt a recording.

To stop recording:

Press the ■ button.

After recording:

Press the ■ button.

- After the track number has been written on the disc, the power will be turned off automatically.
- Whilst "TOC EDIT!" is displayed, do not jar or bump the main unit. Otherwise, the TOC may not be recorded properly.

Note:

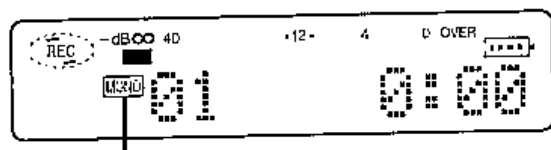
- If the recording level display is changed from "MIC H" to "MIC L", the sound will be interrupted momentarily. This is normal.

■ To record for a long time in the monaural mode

When a recording is made in the monaural long-play mode, it can be about twice as long as the recording time available for a stereo recording. The monaural long-play mode is very useful for recording conferences or lectures.

Press the MODE/SPACE button whilst the recording is paused.

- Each time this button is pressed, the display will switch between the stereo mode and the monaural long-play mode.
- This mode cannot be changed whilst recording.



Lights up whilst in the monaural long-play mode.

Notes:

- If input is from a stereo source, the sounds from the left and right channels will be combined.
- Although the monitor sound you hear in the headphones whilst recording is in stereo, recording will be monaural.
- MiniDiscs recorded in the monaural long-play mode may not be playable on other MD players.
- When the unit is stopped after a recording has been made in the monaural long-play mode, the recording mode will return to the stereo mode automatically.

■ To create your own track numbers whilst recording

By creating your own track numbers whilst recording, you can mark and later search for any passage you wish. (You can also create your own track numbers during digital recording.)

Press the REC button during recording at the point where you want to create a track number.

- After the track number has been written on the disc, the recording will continue.

If you mistakenly make track numbers:

You can combine them after the recording has been made.

- This product is designed to record a maximum of 254 tracks. However, even though the number of tracks has not reached the full 254, you may run out of room to add more recordings. (Page 28)

■ Recording tracks as a single track

When making an analogue recording, you can record several pieces of music as a single track, without using the auto marker function.

- 1 Press the EDIT/AUTO MARK button whilst the recording is paused.
 - "MARK OFF" will be displayed.
- 2 Press the ►|| button.
 - Recording will start.

Making a track number automatically:

Press the EDIT/AUTO MARK button whilst the recording is paused.

- "AUTO MARK" will be displayed.

Note:

- When making digital recordings using a CD player or an MD player, track numbers will be created automatically regardless of the setting of the auto marker function.

■ To check the remaining disc time

During recording, you can check the remaining time available on the disc. Press the DISPLAY button during recording or whilst in the recording pause mode.

- The display will switch to show the remaining disc time.

To return to the initial display:

Press the DISPLAY button again.

- The display will switch to show the elapsed recording time.

Notes:

- The display of the remaining disc time may be somewhat different from the actual remaining time. (Page 28)
- When a disc becomes full during recording, the unit will enter the stop mode.

■ To start recording from the middle of an existing track

You can erase a portion of a track that has been already recorded and make a new recording.

- All of the tracks that follow the newly recorded track will be erased.

1 During playback, press the ►|| button at the point where you want to begin re-recording.

- The unit will pause.

2 Press the REC button.

- To cancel the operation, press the ■ button.

3 Press the ENTER/SYNCHRO button.

- All of the tracks and track names following the point where recording is paused will be erased.

4 Press the ►|| button.

- Recording will start.

Notes:

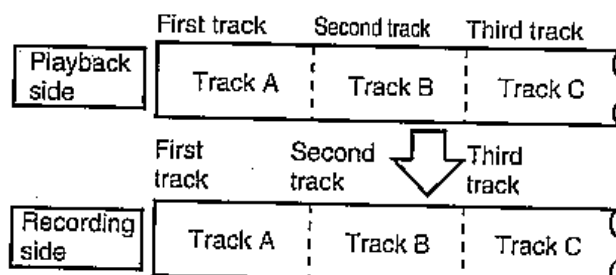
- When there is a track that you don't want to erase after the point on the disc where you want to make a new recording, use the move function to move the track and then make your recording after that point.
- When you want to erase all of the tracks and begin a completely new recording, first use the all erase function.

■ About track numbers

When recording from digital inputs: (CDs/MiniDiscs only)

Track numbers will be created automatically for each track at the same point where track numbers already exist on the CD or MiniDisc.

(Synchro marker function)

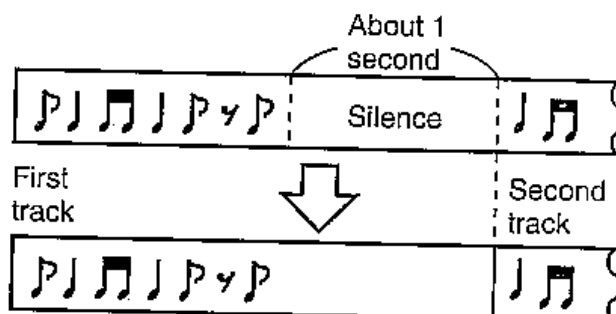


- The track numbers on the playback side may not match the track numbers recorded on the MiniDisc.
- When recording, if a programmed playback is performed by the source or playback is performed by selecting tracks manually, the MiniDisc track numbers may not be the same as on the source.
- The track numbers can also be changed after recording.

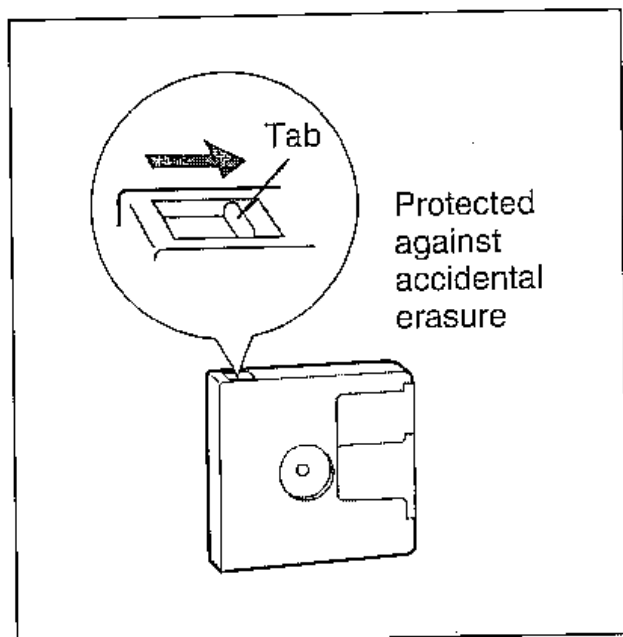
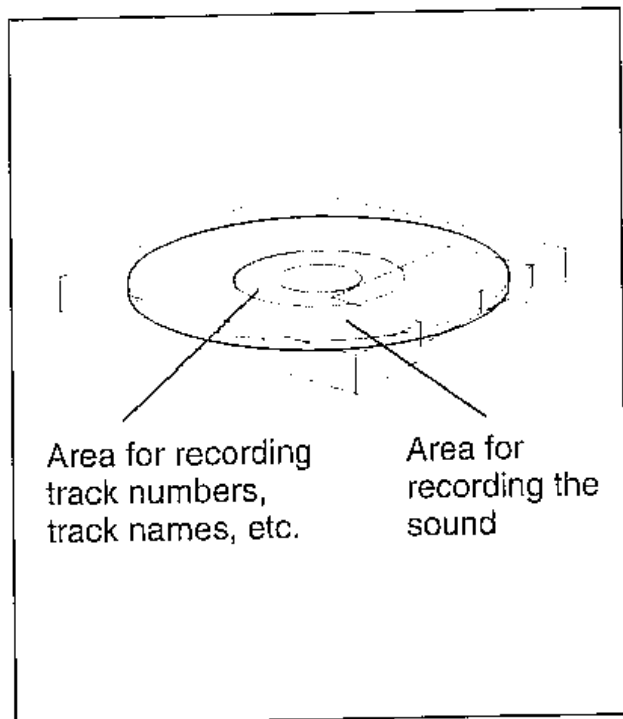
When recording from analogue inputs: (Including digital inputs other than CDs or MiniDiscs)

A new track number will be automatically created whenever 1 second or more of silence occurs in the source.

(Auto marker function)



- If there is some noise in the "silent" spaces from the source, the track numbers may not be created at the correct position, depending on the contents of the source being recorded.
- You can also record a series of tracks without using the auto marker function.



In the following cases, you may not be able to eject the MiniDisc.

- Whilst recording or editing.
- Whilst "TOC EDIT!" is being displayed.

In this case, perform a write operation, and then remove the disc.

■ Disc writing

MiniDiscs have one area in which the sound is recorded and another area where track number, track name, and disc name information is recorded.

First the sound is recorded on a MiniDisc, and then the information (TOC: Table of Contents) for finding the tracks is recorded. This TOC is vitally necessary for playback. Tracks can be edited by rewriting the TOC. When the ■ button is pressed to turn off the power, the current version of the TOC will be written on the disc. Therefore, after pressing the ■ button, do not jar the main unit. It may not be possible to perform playback properly if the TOC is not written correctly on the disc.

■ To prevent recorded discs from being erased accidentally

Slide the accidental erase prevention tab, located on the side of the disc, in the direction indicated by the arrow.

- The disc will then be protected against accidental erasure.
- To add a recording to such a disc, slide the accidental erase prevention tab back to its original position.

Notes:

- Whilst "TOC EDIT!" is displayed
Do not unplug the AC adaptor or jar the main unit.
Information about track numbers etc. may not be written properly on the disc.
- Since the main unit and the AC adaptor heat up during use, avoid having the unit in direct contact with your skin for any length of time.
- Do not jar the main unit during recording. Recording may not be performed correctly.

EDITING

See Fig. 8 to Fig. 12 on pages 7 to 12 of the ILLUSTRATED INSTRUCTIONS.

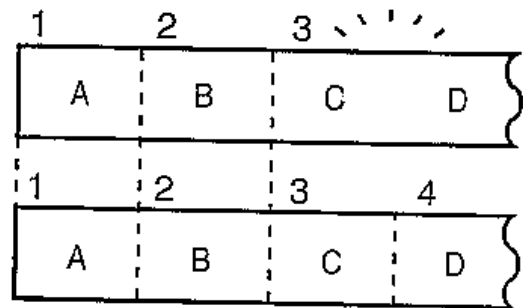
We will explain the 5 editing functions with which you can create your own original discs from recorded MiniDiscs.

Playback-only MiniDiscs cannot be edited.

DIVIDE

A single track can be divided into two at any desired position.

- The numbers of the tracks which come after the newly divided track will be automatically increased by one.

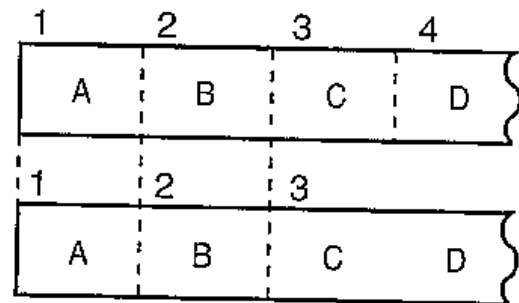


(Page 21)

COMBINE

Two consecutive tracks can be combined into one track.

- The numbers assigned to the tracks following the combined tracks will be decreased by one automatically.

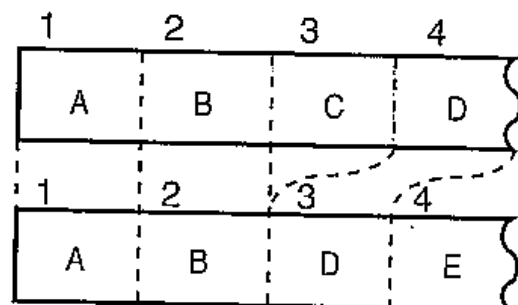


(Page 21)

ERASE

Tracks you want to erase can be erased one at a time or all at once.

Once a track has been erased, it cannot be recovered. Double-check the track number before erasing it.

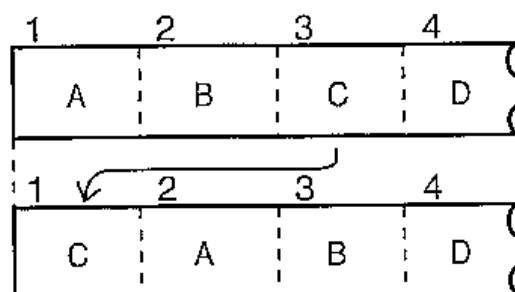


(Page 22)

MOVE

A designated track can be moved to any desired position.

- The numbers assigned to the tracks following the track which is moved will be adjusted automatically.



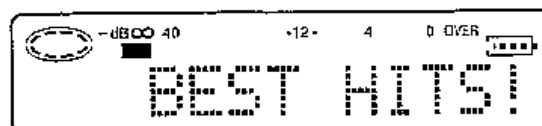
(Page 22)

TRACK/DISC NAME

Discs and tracks (up to 255 tracks per disc) can be named.

Since track names are displayed when the beginning of each track is located or during playback, you can quickly check the name of each track.

- Letters (capital letters/lowercase letters), numbers and symbols can be used.



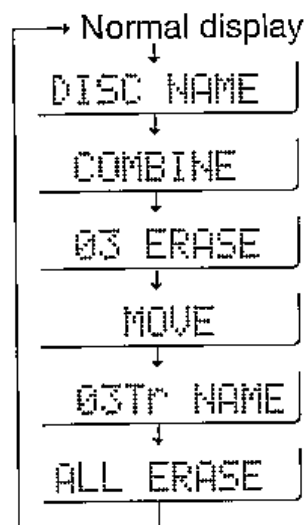
(Pages 23 to 25)

Changing the editing function

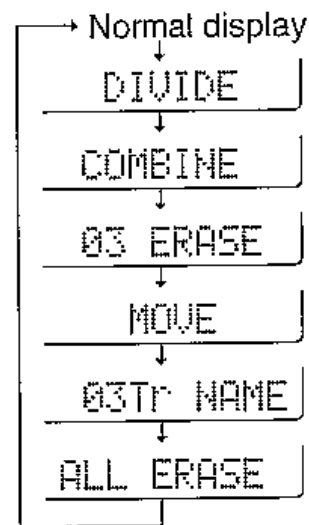
The editing operation is selected in the pause or stop mode.

Each time the EDIT/AUTO MARK button is pressed, the display will show a different function, as listed to the right.

Functions that can be selected when stopped



Functions that can be selected whilst in the pause mode



■ **DIVIDE**

- 1** Play the track which you want to divide into two, and press the ►|| button at the point where you want to divide the track.
 - The unit will enter the pause mode.
- 2** Press the EDIT/AUTO MARK button to select "DIVIDE".
- 3** Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 4** Press the ENTER/SYNCHRO button again.
 - The track is divided, and the unit pauses at the beginning of the second of the two tracks.
 - The numbers of the tracks which come after the divided track are automatically increased by one.
 - When a track which has a name is divided, the two new tracks will have the same name.
- 5** To write the results of the operation on the disc, press the ■ button.
 - After "TOC EDIT!" has been displayed, the power will be turned off automatically.

Note:

- This unit can hold up to 255 tracks. However, even if the number of tracks assigned has not reached 254, it might not be possible to make any further divisions of tracks.
(Page 28)

■ **COMBINE**

- 1** Play the last of the two tracks which you want to combine, and press the ►|| button.
 - The unit will enter the pause mode.
- 2** Press the EDIT/AUTO MARK button to select "COMBINE".
- 3** Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 4** Press the ENTER/SYNCHRO button again.
 - The two tracks are combined, and the unit is paused at the beginning of the combined track.
 - The numbers assigned to the tracks following the combined track are automatically decreased by one.

When both tracks have a name:

- When only the first track has a name → That name will be used.
- When only the second of the two tracks has a name → That name will be used.
- When both tracks have a name → The name of the first track will be used.

- 5** To write the results of the operation on the disc, press the ■ button.
 - After "TOC EDIT!" has been displayed, the power will be turned off.

To combine two non-contiguous tracks:

(example: the first and third tracks)

Move the third track to the second track using the MOVE function.

(Page 22)

Then, combine the first and second tracks using the COMBINE function.

In the following cases, tracks cannot be combined.

- Tracks originally recorded from digital inputs and tracks recorded from analogue inputs.
- Tracks originally recorded in the monaural long-play mode and tracks recorded in the stereo mode.
- It may not be possible to combine tracks whose recording time is less than 12 seconds.

■ ERASE

To erase tracks one at a time:

- 1** Play the track which you want to erase, and press the ►|| button.
 - The unit will enter the pause mode.
- 2** Press the EDIT/AUTO MARK button to select "ERASE".
- 3** Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 4** Press the ENTER/SYNCHRO button again.
 - The track is erased, and the unit is paused at the beginning of the next track.
 - To erase other tracks, repeat steps 1 - 4.
- 5** To write the results of the operation on the disc, press the ■ button.
 - After "TOC EDIT!" has been displayed, the power will be turned off automatically.

Notes:

- Once a track has been erased, it cannot be recovered. Double-check the track number before erasing it.
- When a track is erased, the numbers assigned to the tracks following the erased track will be automatically decreased by one.
- When a track is erased, the track name will be erased at the same time.

To erase all of the tracks at once:

- 1** Whilst in the stop mode, press the EDIT/AUTO MARK button to select "ALL ERASE".
 - "ALL ERASE" can also be selected by holding down the EDIT/AUTO MARK button for at least 2 seconds.
- 2** Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 3** Press the ENTER/SYNCHRO button again.
 - All of the track numbers and track names will be erased.

■ MOVE

- 1** Play the track to be moved, and press the ►|| button.
 - The unit will enter the pause mode.
- 2** Press the EDIT/AUTO MARK button to select "MOVE".
- 3** Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 4** Press the ◀◀ or ▶▶ button to select the direction to move.
 - To increase the track number ▶▶
 - To decrease the track number ◀◀
- 5** Press the ENTER/SYNCHRO button again.
 - The track is moved, and the unit is paused at the beginning of the track.
- 6** To write the results of the operation on the disc, press the ■ button.
 - After "TOC EDIT!" has been displayed, the power will be turned off automatically.

Note:

- When a track has been moved, the other tracks which are affected will be assigned new track numbers automatically.

Example: When moving the fifth track to the third track, the old third track will become the new fourth track, and the old fourth track will become the new fifth track.

Caution:

When a recording operation is performed before writing to the disc (in the pause mode), all of the subsequent tracks will be erased. (Page 17)

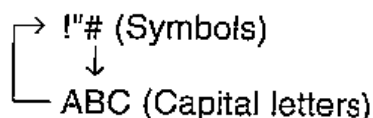
When recording additional tracks, be sure to enter the stop mode before starting to record.

■ Track/disc name

- Up to 255 tracks can be named per disc, and each disc can be given a disc name.
- Tracks and discs can be named using a maximum of 100 characters (including spaces).
- Up to 1,700 characters (approximately) can be used in disc and track names on a MiniDisc.

To create a disc name:

- 1 Whilst in the stop mode, press the EDIT/AUTO MARK button to select "DISC NAME".
- 2 Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 3 Press the CHARACTER button to select the type of character.
 - The first 3 characters of the selected type will be displayed for about 1 second.
 - Every time the CHARACTER button is pressed, the type of characters will change as follows:



- 4 Press the ∨ or ∧ button to select the first letter.
 - When the button is pressed continuously, the displayed character will be changed rapidly.

Type of characters	Characters <symbols> (They are selected using the ∨ or ∧ button.)
Capital letters	<div><div><div>□</div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div><div>.....</div><div>V</div><div>W</div><div>X</div><div>Y</div><div>Z</div></div><div><div>0</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>.....</div><div>8</div><div>9</div></div><div>→ Returns to □.</div></div>
Symbols	<div><div><div>□</div><div>/</div><div>'</div><div>□</div><div>□</div><div>-</div><div>+</div><div>:</div><div>(</div><div>)</div><div>&</div><div><</div><div>></div></div><div><div>1</div><div>?</div><div>!</div><div>"</div><div>#</div><div>\$</div><div>%</div><div>*</div><div>=</div><div>@</div><div>□</div><div>□</div></div><div>→ Returns to □.</div></div>

- 5 When the letter you want is displayed, press the ►►| button.
 - The letter just entered will move to the left of the cursor.
- 6 To enter more letters, repeat steps 3 to 5.
- 7 When the disc name is completely entered, press the ENTER/SYNCHRO button.
- 8 To write the name on the disc, press the ■ button.
 - After "TOC EDIT!" has been displayed, the power will be turned off automatically.

When you want to enter lowercase letter, enter capital letters as described in step 4 and press the DISPLAY button to change them to the lowercase letters.
If you press this button again, the letters will be changed back to capital letters.

To enter a space, press the ∨ or ∧ button to select SPACE. Then, press the ►►| button to enter a space.

To create a track name:

- 1** Play the track which you want to name, and press the ►|| button.
 - The unit will enter the pause mode.
- 2** Press the EDIT/AUTO MARK button to select "Tr NAME".
 - When "Tr NAME" is selected whilst in the stop mode, track numbers can be changed using the |◀◀/▶▶| button.
- 3** Press the ENTER/SYNCHRO button.
 - To cancel the operation, press the ■ button.
- 4** Press the CHARACTER button to select the type of characters.
 - The first 3 characters of the selected type will be displayed for about 1 second.
 - Every time the CHARACTER button is pressed, the type of characters will change as follows:

→ !"# (Symbols)
 ↓
 — ABC (Capital letters)

- 5** Press the ∨ or ∧ button to select the first letter.
 - When the button is pressed continuously, the displayed character will be changed rapidly.

Type of characters	Characters <symbols> (They are selected using the ∨ or ∧ button.)
Capital letters	<div> <div> <div>A</div><div>B</div><div>C</div><div>D</div><div>E</div><div>...</div><div>V</div><div>W</div><div>X</div><div>Y</div><div>Z</div> </div> <div> <div>0</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>...</div><div>8</div><div>9</div> </div> <div>→ Returns to [].</div> </div>
Symbols	<div> <div> <div>[]</div><div>/</div><div>'</div><div>"</div><div>-</div><div>+</div><div>:</div><div>(</div><div>)</div><div>&</div><div><</div><div>></div> </div> <div> <div>!</div><div>?</div><div>;</div><div>.</div><div>#</div><div>\$</div><div>%</div><div>*</div><div>=</div><div>@</div><div>_</div><div>'</div> </div> <div>→ Returns to [].</div> </div>

- 6** When the letter you want is displayed, press the ►| button.
 - The letter just entered will move to the left of the cursor.
- 7** To enter more letters, repeat steps 4 to 6.
- 8** When the track name is completely entered, press the ENTER/SYNCHRO button.
- 9** To write the name on the disc, press the ■ button.
 - After "TOC EDIT!" has been displayed, the power will be turned off automatically.

If an incorrect letter is entered:

To erase a character, press the |◀◀ or ▶▶| button to move the cursor to the character you want to erase, and then press the X-BASS/DELETE button.

To correct a character, press the |◀◀ or ▶▶| button to move the cursor to the character you want to correct, and then enter the correct character.

- Even after all the letters have been entered, you can still go back and correct any mistakes.

To change track names and disc names:

- Some MiniDiscs created on other equipment have more than 101 characters in a track name or disc name. The characters starting with the 101st character cannot be corrected or changed.

To correct a disc name

- 1 Whilst in the stop mode, press the EDIT/AUTO MARK button to select "DISC NAME".
- 2 Press the ENTER/SYNCHRO button.
 - The unit will enter the character correction mode.

To correct track names

- 1 When the unit is paused whilst playing the track you want to correct, press the EDIT/AUTO MARK button to select "Tr NAME".
- 2 Press the ENTER/SYNCHRO button.
 - The unit will enter the character correction mode.

To change characters

After performing steps 1 - 2 above,

- 3 Press the ◀◀ or ▶▶ button to move the cursor to the character you want to change.
- 4 Enter the new character you want, and press the ENTER/SYNCHRO button.

To delete characters

After performing steps 1 - 2 above,

- 3 Press the ◀◀ or ▶▶ button to move the cursor to the character you want to delete.
- 4 Press the X-BASS/DELETE button.
 - The character will be erased.
- 5 Press the ENTER/SYNCHRO button.

To add characters

- 3 Press the ◀◀ or ▶▶ button to move the cursor to the right of the character, where you want to add a new character.
- 4 Press the MODE/SPACE button.
 - A space will be inserted.
- 5 Enter the new character you want, and press the ENTER/SYNCHRO button.

CONVENIENT OPERATION OF THE UNIT

■ Button operation confirmation

Every time a button is pressed, a "beep" will be heard in the headphones. To eliminate the "beep" sound, proceed as follows:

Whilst in the playback or stop mode, hold down the X-BASS/DELETE button until "BEEP OFF" is displayed. (At least 2 seconds)

- Two short beeps will be heard. Then, no matter which button is pressed, no sound will be heard.

To restore the button operation confirmation feature:

Hold down the X-BASS/DELETE button until "BEEP ON" is displayed. (At least 2 seconds)

- One short beep will be heard. When operation buttons are pressed, a "beep" sound will be heard.

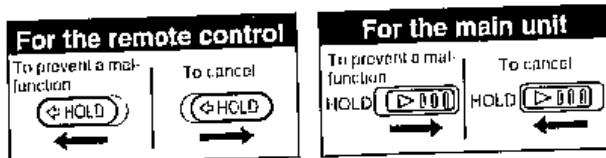
Note:

- The confirmation sound setting is kept stored in memory, even after the power has been turned off.

■ Hold function

To avoid accidentally pressing buttons, use the hold function.

- 1 Place the HOLD switch in the safety position.
- 2 When the unit is in the safety mode, pressing the buttons will have no effect. To operate the unit, place the HOLD switch in the off position.

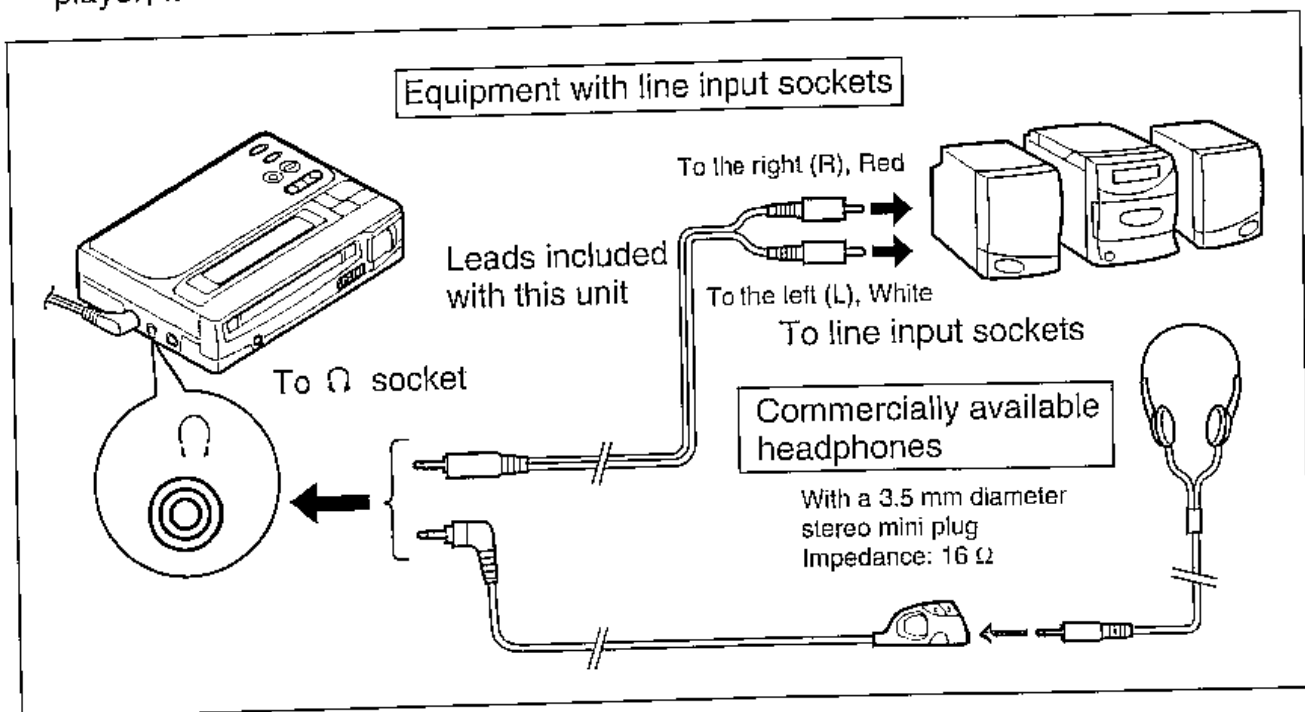


If the hold function is active whilst the power is turned off, the power cannot be turned on by mistake and the battery will not be accidentally drained.

- When you put the unit into a handbag or briefcase, it is recommended that you put the unit into its carrying case first.

■ To listen to a disc using an external amplifier

- Before connecting any other equipment, turn off the power to all units.
- Connect the plugs securely. Improper connection may cause noise or malfunctions.
- When you want to listen to a disc using a separate stereo system or radio cassette player, it is recommended that you adjust the volume on this unit to "VOL 30".



WHAT IS A MINIDISC?

■ What is a MiniDisc?

- A MiniDisc is a 64 mm (2-1/2") diameter disc which is stored in a cartridge. MiniDiscs are easy to handle, compared to compact discs, because they are protected against dust and scratches.
- Recording and playback use a digital system with a sound quality that is similar to that found on compact discs. MiniDiscs cannot twist or stretch like tapes. The quality of sound will not deteriorate. MiniDiscs are extremely durable.
- Never disassemble MiniDiscs.

■ Types of discs

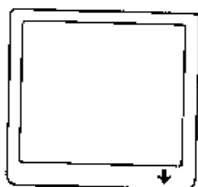
There are two types of discs: playback-only and recordable type.

● Playback-only MiniDisc:

This type of MiniDisc is used for commercially available pre-recorded music. This is the same kind of optical disc as CDs. Playback is performed using an optical pickup.

(Recording and editing are not possible.)

A shutter will be used on only one side (back).

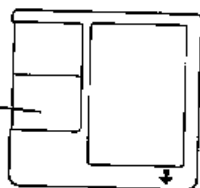


● Recordable MiniDisc:

This is a "raw disc" on which recording can be performed. A magneto optical disc is used.

Recordings are made using a laser and a magnet. Repeated recording is possible.

Shutters will be used on both sides.



■ Adaptive TRansform

Acoustic Coding [ATRAC]

The ATRAC (Adaptive TRansform Acoustic Coding) is a new technology that is designed to eliminate the information in sounds which you cannot hear and compress the remaining sound data so that the recording uses about 1/5 of the original sound information.

Sound data is analysed and filtered to take advantage of psycho acoustic masking. The acoustic quality of the sound is not impaired.

■ High-speed access

A unique feature of MiniDisc is the ability to locate the beginning of a desired track at high speed.

This is because the track number and track name data is stored in a TOC (Table of Contents).

■ Shock Resistant Memory

During playback, approximately 10 seconds of information is stored in the semiconductor memory. Therefore, even when the pickup cannot read information for a second or two due to an external shock, the sound continues without interruption because the information stored in memory is output.

- When the unit is used with the AC adaptor, approximately 10 seconds of sound information will be always stored. When it is used with any kind of battery, between 5 and 10 seconds of sound information will be stored.

If you want to always be sure that approximately 10 seconds of information is stored whilst using in battery operation, hold down the MODE/SPACE button (for at least 2 seconds) whilst in the stop mode to make "P save OFF" appear.

- Please note that the continuous playing time from batteries will be reduced by about 20% in this mode.

↓ To return to the original storage condition

Hold down the MODE/SPACE button whilst in the stop mode (for at least 2 seconds) to make "AUTO P save" appear.

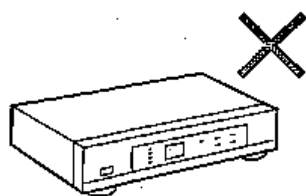
MINIDISC SYSTEM LIMITATIONS

Even if the maximum recording time of a MiniDisc has not been reached, "DISC FULL" or "TOC FULL" may be displayed.	When the number of tracks used reaches the limit, regardless of the remaining recording time, further recording will be impossible. (Maximum number of tracks: 254)
Even if the number of tracks and the recording time have not reached the limit, "DISC FULL" may be displayed.	If there are scratches on a disc, the unit will automatically avoid recording in those areas. The recording time will be reduced.
Even if several short tracks are erased, the remaining recording time may not show an increase.	When the remaining recording time of a disc is displayed, short tracks less than 8 seconds long may not be included in the total.
Two tracks may not be combined in editing.	For MiniDiscs on which repeated recording and editing operations were performed, the COMBINE function may not work.
The total of the recorded time and time remaining on a disc may not add up to the maximum possible recording time.	A cluster (about 2 seconds) is normally the minimum unit of recording. So, even if a track is less than 2 seconds long, it will use about 2 seconds of space on the disc. Therefore, the time actually available for recording may be less than the remaining time displayed. If there are scratches on discs, those sections will be automatically avoided (no recording will be placed in those sections). Therefore, the recording time will be reduced.
When recorded tracks are played back using the cue and review operations, some sounds may be skipped.	For MiniDiscs on which repeated recording and editing were performed, some sounds may be skipped whilst cueing and reviewing.
A track number can be created in the middle of a track.	If there are scratches or dust on a MiniDisc, the track numbers following that track will be increased by one.

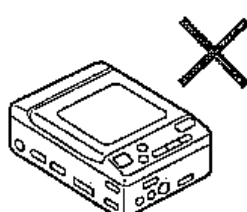
There are cases where digital recording may be impossible.

In the following cases digital recording is impossible, even if you are using digital cables.

- (1) When a recording is attempted with equipment whose sampling frequency is different from the MiniDisc frequency (44.1 kHz)



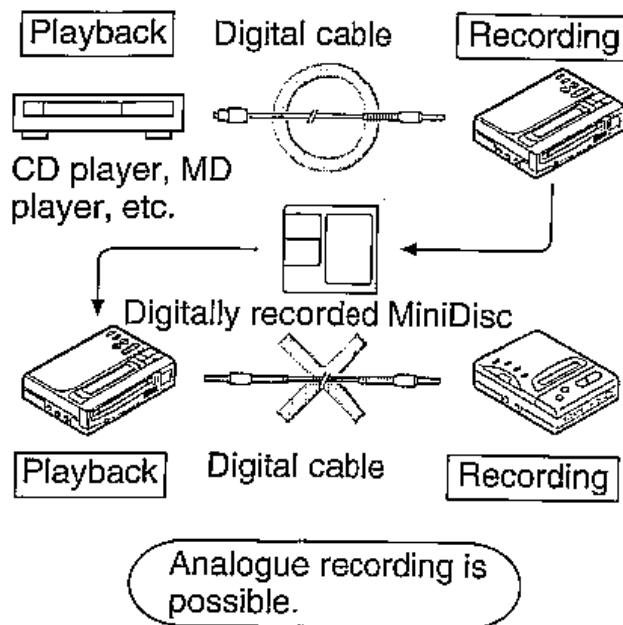
Digital sound
broadcast satellite
tuners
32 kHz or 48 kHz



DAT tape
recorders which
sample at 32 kHz
or 48 kHz

- (2) When you attempt to make a new digital recording from a track that was digitally recorded on a MiniDisc

- MiniDiscs are designed so that further copies cannot be made from digitally recorded MiniDisc tracks. This is a specification of the SCMS (Serial Copy Management System).



TROUBLESHOOTING

■ Moisture condensation

In the following cases, condensation may form inside the unit.

- Shortly after turning on a heater.
- When the unit is placed in a room where there is excessive steam or moisture.
- When the unit is moved from a cool place to a warm place.

When the unit has condensation inside, the disc signals cannot be read, and the product may not function properly.

- If this happens, remove the disc. The condensation should evaporate in approximately 1 hour. The unit will then function properly.

■ If trouble occurs

If strange sounds, smell or smoke come out of the unit or an object is dropped into the unit, remove the AC adaptor from the AC socket and contact an authorised Sharp service centre.

Note:

When this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction. If such trouble occurs, proceed as follows:

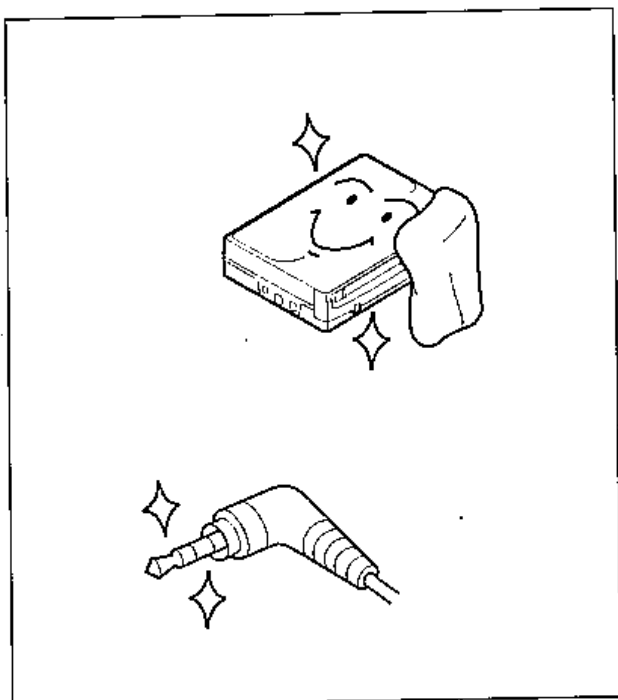
1. Unplug the AC adaptor from the AC socket.
2. Remove the rechargeable battery.
3. Leave the unit completely unpowered for approximately 30 seconds.
4. Reconnect the AC adaptor to the AC socket and retry the operation.

Many potential "problems" can be resolved by the owner without calling a service technician. If something seems to be wrong with this product, check the following before calling your authorised SHARP dealer or service centre.

PROBLEM	CAUSE	REMEDY
The unit does not turn on.	<ul style="list-style-type: none"> ● The AC adaptor is disconnected. ● The rechargeable battery is exhausted. ● The unit is in the safety mode. 	<ul style="list-style-type: none"> ● Plug in the AC adaptor. ● Recharge the battery. ● Move the HOLD switch to turn off the safety mode.
No sound is heard from the headphones.	<ul style="list-style-type: none"> ● The volume is set too low. ● The remote control unit or headphones are not plugged in. 	<ul style="list-style-type: none"> ● Increase the volume. ● Plug the remote control unit or headphones in securely.
When the operation buttons are pressed, the unit does not respond.	<ul style="list-style-type: none"> ● The unit is in the safety mode. ● The rechargeable battery is exhausted. ● The remote control unit plug or headphone plug is not inserted firmly. 	<ul style="list-style-type: none"> ● Move the HOLD switch to turn off the safety mode. ● Recharge the battery. ● Insert the remote control unit plug or headphone plug securely.
Some sounds are skipped.	<ul style="list-style-type: none"> ● The rechargeable battery is exhausted. ● The unit is receiving excessive vibration. 	<ul style="list-style-type: none"> ● Recharge the battery. ● Place the unit in a vibration-free place.
The MiniDisc cannot be ejected.	<ul style="list-style-type: none"> ● The track number or character information has not been written on the disc. ● The unit is in the recording or editing mode. 	<ul style="list-style-type: none"> ● Press the ■ button to turn off the power (which will finish writing the information on the disc).
Recording and editing are impossible.	<ul style="list-style-type: none"> ● Is the MiniDisc protected against accidental erasure? ● Is the unit connected properly to the other equipment? ● Is the AC adaptor unplugged or did a power failure occur whilst recording or editing? ● Is the unit in the safety mode? 	<ul style="list-style-type: none"> ● Slide the accidental erase prevention tab back to its original position. ● Connect the unit properly to the other equipment. ● Plug in the AC adaptor. ● Move the HOLD switch to turn off the safety mode.
Recharging is impossible.	<ul style="list-style-type: none"> ● It takes a maximum of up to 2 minutes whilst the unit checks the condition of the rechargeable battery and actually starts recharging. ● After charging a rechargeable battery which has not been used very often, insert it into the unit, play a disc (for several seconds), and then turn off the power to the main unit. 	

Error messages	Meaning	Remedy
NO DISC	● A disc has not been loaded.	● Load a disc.
DISC ERROR	● The disc is damaged.	● Reload the disc or replace it.
BLANK DISC	● Nothing is recorded.	● Replace the disc with a recorded disc.
00Tr 0:00	● Music is not being recorded.	
? DISC	● A disc which contains data other than music was played.	● A disc which contains non-music data cannot be played.
	● There is an error in the signal from the disc.	● Replace it with another recorded disc.
TOC ERROR	● A large portion of the disc has been damaged.	● Replace it with another recorded disc.
UOC ERROR	● A large portion of the disc has been damaged.	● Replace it with another recorded disc.
	● There is an error in the recorded signal.	● Replace it with a nother recordable disc or use the ALL ERASE function (page 22), to erase the signal error and then try recording again.
DISC FULL	● The disc is out of recording space.	● Replace it with another recordable disc.
PB DISC	● You tried to record on a playback-only disc.	● Replace it with a recordable disc.
PROTECTED	● The disc is write protected.	● Move the write protection knob back to its original position.
TOC FULL	● There is no space left for recording character information (track names, disc names, etc.).	● Replace it with another recordable disc.
Can't REC	● Recording cannot be performed correctly due to vibration or shock in the unit.	● Re-record or replace it.
Din UNLOCK	● Poor connection of the digital cable. ● The sampling frequency is not 44.1 kHz.	● Connect the digital cable securely. ● Record using the analogue cable.
Can't COPY	● No copy can be made because of the SCMS copyright system.	● Record using the analogue cable.
Can't EDIT	● A track cannot be edited.	● Change the stop position of the track and then try editing it.
TEMP OVER	● The temperature is too high.	● Turn off the power, and wait for a while.
BATT EMPTY	● The rechargeable battery run down.	● Charge the rechargeable battery (or use the AC adaptor for power.)
LOCKED LOCK ERROR	● The EJECT lever was moved during recording or editing.	● Turn off the power and remove the MiniDisc.
HOLD	● The unit is in the malfunction prevention state.	● Return the HOLD switch to its original position.
SORRY	● Since a track number is currently being located or written to, the unit cannot accept your command.	● Wait for a while and try to the operation again.
DEFECT	● Since this disc has scratches on it, the recording operation was skipped.	● If the sound you hear is not right, replace the disc with another recordable disc.
POWER ?	● Improper power is being supplied.	● Use one of the specified power sources.
Tr. Protect	● The track has been protected from being erased.	● Edit the track with the device on which it was recorded.
SYSTEM ERR	● You have come to the conclusion that the unit is out of order.	● To have it repaired, go to the distributor where you purchased the unit.

MAINTENANCE



■ Cleaning

- **When the unit becomes dirty**
Clean it with a soft cloth.
When the unit is excessively dirty, use a soft cloth dampened in water.
(External surfaces only).
- **Clean the headphone plug and the RCA lead plug.**
This will prevent noise.

Notes:

- Do not use chemicals for cleaning (petrol, paint thinner, etc.)
It may affect the quality or colour.
- Do not apply oil to the inside of the unit.
It may cause malfunctions.

SPECIFICATIONS

As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

■ General

Power source:	DC 3.6V (rechargeable lithium-ion battery x 1) DC 5V (AC adaptor) AC 110 to 240V, 50/60 Hz
Power consumption:	0.15 A (AC adaptor) 4W
Output power:	RMS; 20mW (10 mW + 10 mW) (0.2% T.H.D.)
Rechargeable battery performance: (Fully charged)	Approx. 4.5 hours (continuous play) Approx. 3.5 hours (continuous recording)

Input sensitivity:

Recording level	Reference input level	Input impedance
MIC H	0.2 mV	4 k ohms
MIC L	2.0 mV	4 k ohms
LINE	75 mV	10 k ohms

Output level:

	Specified output	Maximum output level	Load impedance
Headphones	—	10 mW + 10 mW	16 ohms
LINE	500 mV (-12dB)	—	50 k ohms

Dimensions:

Width: 109.2 mm (4-5/16")

Height: 30.5 mm (1-7/32")

Depth: 81.3 mm (3-7/32")

Weight:

275 g (0.6 lbs.) with rechargeable battery

Input socket:

Line/Mic/Optical

Output socket:

Headphones

■ MiniDisc Recorder**Type:**

Portable MiniDisc recorder

Signal readout:

Non-contact, semi-conductor laser pick-up

Audio channels:

2

Frequency response:20 to 20,000 Hz \pm 3 dB**Rotation speed:**

Approximately 400 to 900 rpm

Error correction:

ACIRC (Advanced Cross Interleave Reed-Solomon Code)

Coding:

ATRAC (Adaptive TRansform Acoustic Coding)

Recording method:

Magnetic modulation overwrite method

A/D, D/A converter:

1-bit

Sampling frequency:

44.1 kHz

Modulation system:

EFM (Eight to Fourteen Modulation)

Wow and flutter:Unmeasurable (less than $\pm 0.001\%$ W. peak)**■ Headphones****Type:**

Inner-ear dynamic

Impedance:

16 ohms

SHARP

SHARP CORPORATION

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